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EVALUATION OF MODERN AND TRADITIONAL METHODS OF DELIVERY POSITIONS

By

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SUMMARY

A randomised controlled trial designated to investigate the effect of position of delivery in the second stage of labour is reported. Seventy-five obstetrically normal patients at term in spontaneous labour were delivered in one of the 3 positions viz., the traditional squatting, modern dorsal supine and left lateral positions.

The mean duration of second stage was same in the three positions of delivery in primigravidae. But in the second gravidae the mean duration of second stage was 14.78 mins. more in the squatting as compared to the dorsal supine and 6.45 mins. as compared to the left lateral. There were 100% spontaneous deliveries in the squatting position as compared to 84% in the dorsal and 92% in the lateral positions. The need for episiotomies was also very low in the squatting positions i.e. in 8% primis as compared to 40% in lateral and 68% in dorsal supine. In second gravidae in the squatting position, none needed an episiotomy, 8% did so in the left lateral and 4% in dorsal supine. Bearing down was also easier for the patient in the squatting position and only 8% had severe backache in this position as compared to 44% in dorsal and 32% in lateral positions.

Introduction

The optimal position of the woman during childbirth has always been an in-

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teresting topic for discussion. There is a lot of archaeological evidence to support the view that the supine lithotomy position is quite recent and that previously women used to sit up for birth.

This position of delivery is still maintained in our own villages. As almo-

one thirds of births in the world occur without the benefit of modern obstetrical aids, the delivery postures assume an importance that must be appreciated especially in our part of the world. Here obstetrical aid is not very far off in the form of local and traditional 'dais', who assist delivery as they have known their previous generations to do. The present study was carried out as a preliminary effort to find out if the old traditional method is more efficient for the expulsion of the baby.

Material and Methods

Different postures of delivery in the second stage of labour were tried in 75 patients with full term pregnancy, in spontaneous labour, over a period of one year in the department of Obst. & Gynae., Lalla Ded Hospital Srinagar. At the end of the first stage of labour, the patients were delivered in one of three position viz., the traditional squatting, modern dorsal supine and left lateral positions till 25 patients had delivered in each position.

All patients were primi or second gravidae with previous full term normal delivery, at present with singleton pregnancy of more than 37 weeks and cephalic presentation.

Cephalopelvic disproportion was ruled out in all patients; none had any signs of foetal distress.

At the end of the first stage of labour, the patients were shifted to the second stage delivery room and allowed to bear down. Every other patient was made to deliver in the left lateral and every third patient in the squatting position, which, if they refused, were then allowed to deliver in the position of their choice.

In the dorsal position the patients were made to deliver lying down on their backs on the delivery table. Their feet were

not held in stirrups but kept along vertical rods of the delivery table for support.

In the left lateral position the patient was placed on her side, left leg extended and the right leg flexed and abducted. An assistant held the leg in this position. In the squatting position the patients were made to sit with their thighs abducted, feet raised from the ground on bricks. They held on to a stool to prevent them from toppling over and to help them in bearing down efforts. Subsequently an easier way was discovered by the patients themselves. They held on to the raised head end of the delivery table, facing it, and with their back facing the accoucheur. Delivery was assisted from the back (dorso posterior).

Episiotomy (mediolateral) was given if it appeared that the head distending the perineum was too large or that the perineal body was unusually resistant after local infiltration of the perineum with 10 cc. of 2% xylocaine.

The baby was weighed and apgar score assigned. 0.2 mg of ergometrine IV was given as soon as baby was expelled.

The third stage was conducted in the same position as the second stage except in the left lateral position where the patient was placed on her back for delivery of the placenta.

Observations and Discussion

The average duration of labour in each position was 27.6 ± 16.4 mins, in dorsal; 27.24 ± 11.1 mins. in lateral and 30.56 ± 9.4 mins. in squatting positions. The study showed a slightly longer duration by about 3 mins. in the squatting position. Considering the small sample size and unequal number of primis and second gravidae in each position the difference can be considered negligible (Table-I).

TABLE I
Duration of Second Stage of Labour in Different Delivery Positions

| Parity | DORSAL | | | LATERAL | | | SQUATTING | | |
|------------------------------------|-------------|-----------|------|-------------|-----------|------|-------------|-----------|--------|
| | Range mins. | Mean mins | SD | Range mins. | Mean mins | SD | Range mins. | Mean mins | SD |
| Primi gravidae | 10-65 | 32.36 | 15.9 | 20-65 | 34.09 | 12.3 | 18-50 | 31.44 | 9.5 |
| Second gravidae | 5-20 | 12.5 | 4.8 | 10-30 | 20.85 | 6 | 14-45 | 27.28 | 8.5 |
| Total | 5-65 | 27.6 | 16.4 | 10-65 | 27.24 | 11.1 | 14-50 | 30.56 | 9.4 |
| Difference due to mode of delivery | | | | | | | | | P 0.05 |
| Difference due to parity | | | | | | | | | P 0.05 |

In primis the difference in duration of second stage of labour in different positions is negligible in this study. Newton and Newton (1960) reported an increase in the duration of second stage in the squatting position in primis on an average to slightly more than 30 mins.

In second gravidae, the mean duration of second stage was 12.5 ± 4.8 mins. in dorsal; 20.85 ± 6.0 mins. in lateral and 27.28 ± 8.5 mins. in squatting positions, the last being almost twice that of the dorsal. This was statistically significant. Probably the reason was the inclusion of less second gravidae in the squatting position.

A survey of the mode of delivery (Table-II) i.e., whether spontaneous or assisted by vacuum extraction revealed, that in the both squatting position in both primis and second gravidae there were 100% spontaneous deliveries. In the left lateral there were 100% spontaneous deliveries in second gravidae and 90.9% spontaneous deliveries in primis. In the dorsal supine position there were 84% spontaneous deliveries in primis and 84% in second gravidae.

As observed by Howard (1958) on a study of parturition in a modified sitting position using a new type of delivery table, 50.96% delivered spontaneously; 43.3% had an elective low forceps delivery. The lesser resort to vacuum extraction in this study (forceps were not used) could be due to the fact that anaesthesia is used very infrequently in the second stage of labour in our institution and the patients are active, co-operative and participate freely in the delivery process.

The 100% spontaneous deliveries in the squatting position is perhaps due to the favourable cephalic flexion in the sitting position due to which adaptation of the

TABLE II
Mode of Delivery in Different Position of Delivery

| Parity | Position of Delivery | Spontaneous | | Assisted Delivery | | All types | |
|-----------------|----------------------|-------------|-------|-------------------|-------|-----------|-----|
| | | No. | % | No. | % | No. | % |
| Primigravidae | a. Dorsal | 15 | 78.94 | 4 | 21.05 | 19 | 100 |
| | b. Lateral | 10 | 90.9 | 1 | 9.1 | 11 | 100 |
| | c. Squatting | 18 | 100 | — | — | 18 | 100 |
| Sub-total I | | 43 | 89.6 | 5 | 10.4 | 48 | 100 |
| Second-Gravidae | a. Dorsal | 5 | 83.3 | 1 | 16.7 | 6 | 100 |
| | b. Lateral | 13 | 92.8 | 1 | 7.2 | 14 | 100 |
| | c. Squatting | 7 | 100 | — | — | 7 | 100 |
| Sub-total II | | 25 | 92.6 | 2 | 7.4 | 27 | 100 |
| All Types | a. Dorsal | 20 | 80 | 5 | 20 | 25 | 100 |
| | b. Lateral | 23 | 92 | 2 | 8 | 25 | 100 |
| | c. Squatting | 25 | 100 | — | — | 25 | 100 |
| Grand Total | | 68 | 90.67 | 7 | 9.33 | 75 | 100 |

foetal head to the pelvic inlet is improved (Kirchhoff, 1977). Also in the squatting position the birth canal from the uterine fundus to the pelvic floor assumes a perpendicular position and the effect of gravity on the foetus facilitates passage of the head below the symphysis and along the perineum (Kirchhoff, 1977). Also, in the squatting position

both transverse and A-P diameters of the outlet are bigger, Russell (1969) observed increases of 1 cm in transverse and 2 cm in A-P diameters and an average increase in area of the outlet upto 28% radiologically.

In the squatting position the resort to episiotomies was very less (Table-III).

TABLE III
Table Showing Relationship of the Positions of Delivery to the Need for Episiotomies

| Parity | Position of delivery | Episiotomies | | None | | All Types | |
|-----------------|----------------------|--------------|------|------|------|-----------|-----|
| | | No. | % | No. | % | No. | % |
| Primi gravidae | a. Dorsal | 17 | 89.5 | 2 | 10.5 | 19 | 100 |
| | b. Lateral | 10 | 90.9 | 1 | 9.1 | 11 | 100 |
| | c. Squatting | 2 | 11.1 | 16 | 88.9 | 18 | 100 |
| Sub total-I | | 29 | 60.4 | 19 | 39.6 | 48 | 100 |
| Second gravidae | a. Dorsal | 1 | 16.7 | 5 | 83.3 | 6 | 100 |
| | b. Lateral | 2 | 14.3 | 12 | 85.7 | 14 | 100 |
| | c. Squatting | 0 | 0 | 7 | 100 | 7 | 100 |
| Sub total-II | | 3 | 11 | 24 | 88.9 | 27 | 100 |
| All Types | a. Dorsal | 18 | 72 | 7 | 28 | 25 | 100 |
| | b. Lateral | 12 | 38 | 13 | 52 | 25 | 100 |
| | c. Squatting | 2 | 8 | 23 | 92 | 25 | 100 |
| Grand Total | | 32 | 42.7 | 43 | 57.3 | 75 | 100 |

Only 11.1% primis needed an episiotomy as compared to 90.9% in lateral and 89.5% in dorsal supine positions. Of the second gravidae none needed an episiotomy in squatting; 14.3% did so in the lateral and 16.7% in the dorsal supine positions. This very low incidence of episiotomies in the squatting position was highly significant, the reason being the better stretching of the perineum by the foetal head. Also the axis of the birth canal in the squatting position being almost vertical, added to the effect of gravity on the uterine contents and the better ability to bear down resulted in the low episiotomy rate. It was also observed that the head did not slip back in between contractions in the squatting position, so the perineal stretching was gradual and sustained.

Kirchhoff (1977) reported the investigation of Suhr-Jessen who believes that the effect of gravity on the uterine contents approximately corresponds to the force of vacuum extraction during dilatation as well as during expulsion.

In the study by Newton (1957) on delivery in the squatting position 62% of patients did not require an episiotomy.

The difference in the three positions on the mean duration of third stage of labour was statistically insignificant.

There was no difference in the occurrence of perineal tears or post partum haemorrhage in the three positions. Also there was no effect of position on the foetal outcome.

Most patients who delivered in the squatting position had no difficulty in doing so. 16% from urban and 8% from rural areas refused to sit and deliver.

Those from rural areas said such delivery was not for the hospital. Urban patients most easily accepted the dorsal than any other position.

Only 4% of those who delivered in the squatting position found bearing down difficult as compared to 48% in lateral position. 44% had severe backache in the dorsal as compared to 32% in the lateral and 8% in the squatting positions.

Mengert and Murphy (1933) showed that there is a 30.5% increase in straining efficiency in favour of sitting.

Conclusion

From the point of view of the accoucheur, the dorsal position is perhaps the best. There is easy access to the perineum and the results of the patient's expulsive efforts is clearly observed. It is also easier to ensure asepsis and to terminate second stage of labour where necessary by forceps, vacuum and episiotomy. This is easy no doubt due to years of obstetric training in this position.

The left lateral, while being difficult for the patient to push, is also difficult for the doctor to deliver as an assistant must hold the patients flexed leg in flexion and abduction. In addition, the patient must again be shifted to the supine for delivery of the placenta.

In the squatting position, the patient took more active part in the delivery process. The patient concentrated on pushing down with all her force by holding on to a support.

This study has revealed the benefits of the squatting position but is too small to explain the possible use of this position

in certain disorders like heart disease, pregnancy induced hypertension and in Rh negative women where there could be a decreased fetomaternal transfusion and consequently lesser incidence of isoimmunisation.

In these aspects there is much scope for the investigation of the benefits of the squatting position in a large scale systematic study.

References

1. Howard, F. H.: *Obstet. Gynec.* 11: 318 1958.
2. Kirchoff, H.: *Organorama*, 14: 11, 1977.
3. Mengert, W. F. and Murphy, D. P.: *Surg. Gynec. Obstet.*, 57: 745, 1933.
4. Newton, M.: *Surg. Forum*, 7: 517, 1957.
5. Newton, M. and Newton, N.: *Obstet. & Gynec.*, 15: 28, 1960.
6. Russell, J. G. B.: *J. Obstet. Gynec. Brit. C'wealth.*, 76: 817, 1969.